BRUHAT BANGALORE MAHANAGARA PALIKE

Improvement to Roads and Drains in Bhadrappa Layout and Surrounding area in Ward No.08

Estimated Cost in Lakhs :- 94.00

S.L No	Description of Work	Unit	Nos	Length m	Breadth m	Depth m	Quantity	Rate in Rs	Amount in Rs
1	Removing and resetting of footpath slab (P.No.265, I.No.37.56 of PW, P&IWTD SR 2016-17)								
	Kodigehalli Main Road	Sqm							
	From ORR to SWD								
	LHS		1	63.00	1.20		75.60		
	RHS		1	112.00	1.20		134.40		
							210.00	**127.20**	**26712.00**
2	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Kodigehalli Main Road	Sqm							
	From ORR to SWD								
	New Drain								
	LHS		1	85.00	0.90		76.50		
	RHS		1	95.00	0.90		85.50		
	Missing Slabs		1	11.00	1.20		13.20		
						Total Quantity	**175.20**	**1,668.48**	**292318.00**
3	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	Kodigehalli Main Road	**Cum**							
	From ORR to SWD								
	New RCC Drain								
	LHS		1	85.00	1.10	0.90	84.15		
	RHS		1	95.00	1.10	0.90	94.05		
	Desilt Only								
	LHS		1	63.00	0.60	0.75	28.35		
	RHS		1	112.00	0.60	0.75	50.40		
	Cross Road		2	84.00	0.60	0.50	50.40		
	Cross Road		2	37.00	0.60	0.50	22.20		
	Cross Road		2	114.00	0.60	0.50	68.40		
	Cross Road		2	103.00	0.60	0.50	61.80		
	Road Truf								
	LHS		1	220.00	0.30	0.30	19.80		
	RHS		1	220.00	0.30	0.30	19.80		

						Total Quantity	**499.35**	**194.80**	**97273.00**
4	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Kodigehalli Main Road	Cum							
	From ORR to SWD								
	New RCC Drain								
	LHS		1	85.00	1.10	0.15	14.03		
	RHS		1	95.00	1.10	0.15	15.68		
	Road Truf								
	LHS		1	220.00	0.25	0.10	5.50		
	RHS		1	220.00	0.25	0.10	5.50		
	Vent Concrete								
	LHS		1	63.00	0.60	0.10	3.78		
	RHS		1	112.00	0.60	0.10	6.72		
						Total Quantity	**51.20**	**5,134.81**	**262902.00**
5	Providing laying plain/ reinforced cement concrete M20 Grade for Box Drain walls of thickness 10cm to 20cm including centering shuttering for work etc. complete as per approved drawing and design MORTH specification No. 1500, 1700, 2200. (P.No.265, I.No.37.59.2 of PW, P&IWTD SR 2016-17)								
	Kodigehalli Main Road	Cum							
	New RCC Drain								
	Bottom Raft								
	LHS		1	85.00	0.90	0.15	11.48		
	RHS		1	95.00	0.90	0.15	12.83		
	Side Wall								
	LHS		2	85.00	0.15	0.65	16.58		
	RHS		2	95.00	0.15	0.65	18.53		
	Road Truf								
	LHS		1	220.00	0.25	0.10	5.50		
	RHS		1	220.00	0.25	0.10	5.50		
	Vent Concrete								
	LHS		1	63.00	0.60	0.15	5.67		
	RHS		1	112.00	0.60	0.15	10.08		
	Kodigehalli Main Road								
	Coping Concrete								
	LHS		2	63.00	0.15	0.10	1.89		
	RHS		2	112.00	0.15	0.10	3.36		
						Total Quantity	**91.40**	**10,591.18**	**968034.00**
6	KSRB - 4.9.2: Providing TMT steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3. (P.No.17, I.No.4.46.3 of PW, P&IWTD SR 2016-17)								

	Consider 60Kgs/cum for Drain	Tonne							
				59.40		0.06	3.56		
						Total Quantity	**3.56**	**61,673.68**	**219805.00**
7	Removing and resetting of kerb stones(P.No.185, I.No.37.57 of PW,P&IWTD SR 2016-17)								
	Kodigehalli Main Road	Nos							
	LHS		1	70.00	--	/0.45	156.00		
	RHS		1	92.00	--	/0.45	204.00		
						Total Quantity	**360.00**	**63.09**	**22712.00**
8	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation ete.,complete. (P.No.25, I.No.5.30 of PW,P&IWTD S.R 2016-17)								
	Kodigehalli Main Road	Nos							
	From ORR to SWD								
	For New Drain								
	LHS		1	80.00	--	/0.45	178.00		
	RHS		1	93.00	--	/0.45	207.00		
						Total Quantity	**385.00**	**318.51**	**122626.00**
9	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (P.No.182, I.No. 24.1 of PW,P&IWTD SR 2016-17)								
	Kodigehalli Main Road	Sqm							
			1	80.00	--	0.35	178.00		
			1	93.00	--	0.35	207.00		
						Total Quantity	**385.00**	**61.06**	**23508.00**
10	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Badrappa Layout	Cum							
	1st Main Road								
	UGD Cut		1	320.00	0.70	0.25	56.00		
			1	320.00	6.45	0.25	516.00		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD								
	UGD CUT		1	220.00	1.00	0.25	55.00		
			1	220.00	9.00	0.25	495.00		
						Total Quantity	**1122.00**		
						BOQ Quantity	**319.20**		
						Quantity Up to 125%	**399.00**	**158.17**	**63110.00**

							Quantity Above 125%	**723.00**	**158.17**	**114357.00**
11	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)									
	Badrappa Layout	Cum								
	1st Main Road									
	UGD Cut		1	320.00	0.70	0.23	51.52			
			1	320.00	6.45	0.23	474.72			
	Kodigehalli Main Road									
	From Outer Ring Road to SWD									
	UGD CUT		1	220.00	1.00	0.23	50.60			
			1	220.00	9.00	0.23	455.40			
							Total Qty	**1032.24**		
							BOQ Quantity	**319.20**		
							Quantity Up to 125%	**399.00**	**1,697.36**	**677247.00**
							Quantity Above 125%	**633.24**	**1,697.36**	**1074834.00**
12	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)									
	Badrappa Layout	Sq-m								
	1st Main Road		1	320.00	6.45		2064.00			
	Kodigehalli Main Road									
	From Outer Ring Road to SWD		1	220.00	9.00		1980.00			
							Total Qty	**4044.00**		
							BOQ Quantity	**1276.80**		
							Quantity Up to 125%	**1596.00**	**26.46**	**42230.00**
							Quantity Above 125%	**2448.00**	**26.46**	**64768.00**
13	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)									
		Sqm								
	Cross Road		1	84.00	4.00		336.00			
	Cross Road		1	37.00	4.50		166.50			
	Cross Road		1	114.00	5.25		598.50			
	Cross Road		1	103.00	5.00		515.00			
							Total Quantity	**1616.00**	**3.05**	**4929.00**

14	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For DBM	Sq-m							
	Badrappa Layout								
	1st Main Road		1	320.00	6.45		2064.00		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD		1	220.00	9.00		1980.00		
	Cross Road		1	84.00	4.00		336.00		
	Cross Road		1	37.00	4.50		166.50		
	Cross Road		1	114.00	5.25		598.50		
	Cross Road		1	103.00	5.00		515.00		
	For Laying BC								
	Badrappa Layout								
	1st Main Road		1	320.00	6.45		2064.00		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD		1	220.00	9.00		1980.00		
	Cross Road		1	84.00	4.00		336.00		
	Cross Road		1	37.00	4.50		166.50		
	Cross Road		1	114.00	5.25		598.50		
	Cross Road		1	103.00	5.00		515.00		
						Total Qty	**11320.00**	**12.21**	**138217.00**
15	KSRRB M500-16. Providing and laying dense bituminous macadam 50-75mm compacted thickness with 4.5% VG-30 Bitumen using 40/60 TPH capacity H.M.P, using crushed aggregates of grading II, premixed with VG 30 grade bituminous binder and transporting the hot mix to work site, laying with mechanical paver to the required grade level and alignment rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10, complete in all respects complete as per specification MORTH specification No. 507 (P.No.162 I.No. 21.17.6 of PW,P&IWTD S.R 2016-17)								
	For DBM	cum							
	Badrappa Layout								
	1st Main Road		1	320.00	6.45	0.05	103.20		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD		1	220.00	9.00	0.05	99.00		
	Cross Road		1	84.00	4.00	0.05	16.80		
	Cross Road		1	37.00	4.50	0.05	8.33		
	Cross Road		1	114.00	5.25	0.05	29.93		
	Cross Road		1	103.00	5.00	0.05	25.75		
						Total Qty	**283.00**	**6,835.22**	**1934367.00**

16	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For BC	Cum							
	Badrappa Layout								
	1st Main Road		1	320.00	6.45	0.04	82.56		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD		1	220.00	9.00	0.04	79.20		
	Road -1		1	84.00	4.00	0.04	13.44		
	Road 2		1	37.00	4.50	0.04	6.66		
	Road 3		1	114.00	5.25	0.04	23.94		
	Road 3		1	103.00	5.00	0.04	20.60		
						Total Qty	**226.40**	**7,793.80**	**1764516.00**
17	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	1st Main Road	Sq-m							
	Edge Line		2	320.00	0.10	--	64.00		
	Center Line		1	320.00	0.10	--	16.00		
	Kodigehalli Main Road								
	Edge Line		2	220.00	0.15	--	66.00		
	Center Line		1	220.00	0.15	--	16.50		
						Total Qty	**162.50**	**521.01**	**84664.00**
EIRL-1	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause 401 of MORTH V Revision I.No 20.5 of S.R 2018-19								
	Badrappa Layout	Cum							
	1st Main Road		1	320.00	6.45	0.15	309.60		
	Kodigehalli Main Road								
	From Outer Ring Road to SWD		1	220.00	9.00	0.15	297.00		
						Total Quantity	**606.60**	**2,144.94**	**1301119.00**

EIRL-2	KSRRB M800-35. Supply and Installtion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/ NH/33023/10-97 – DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 mm and height not less than 30 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer. Item No 24.41. SR No 2018-2019								
	Kodigehalli Main Road	Nos							
	Edge Line		2	74		--	148.00		
	Center Line		1	140		--	140.00		
						Total Qty	**288.00**	**384.08**	**110616.00**
								Total Construction Cost	**9410874.08**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17 and 2018-19
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Assistant Engineer | Assistant Executive Engineer 28/2/2020 | Executive Engineer 28/2/2020

Technical Sanction
Accorded for Rs. 100.00 lakhs
Head of A/C P.3075....
CER NO :...07/19-20 Dt:.. 28/02/2020

A | CE (NKL)